

"His average, from the time Bartlett left him, to the Pole was 26 miles. His average on his return was 25.6 miles.

"For comparison with the above figures, as showing that these averages are not at all excessive, the following facts can be taken from the narrative of the last expedition and previous ones:—

"Peary's last two marches on the return, from Cape Columbia to the *Roosevelt*, were 45 miles each. On this and previous expeditions the journey from Cape Hecla to the *Roosevelt*, a distance of 45 to 50 miles, was made in one march. The distance from Cape Columbia to Hecla was also made on other occasions in one march. The march from the *Roosevelt* to Porter Bay, a distance of 35 miles, was repeatedly made in eight, ten, and twelve hours. MacMillan and Borup, returning from Cape Morris Jesup to the *Roosevelt*, made the distance of 250 miles or more in eight marches, an average of over 31 miles a march. Peary, in one of his earlier expeditions, made the distance from Cape Wilkes to Cape D'Urville, a distance of 65 to 70 miles, in one march. He repeatedly made the march from Cape D'Urville to Cape Fraser, a distance of 40 miles, in one march, and in the winter of 1899–1900 travelled from Etah to a point in Robertson Bay, 60 miles distant, in less than twelve hours.

"On his return from Independence Bay to Bowdoin Bay, Peary averaged 20 miles a day for twenty-five successive marches; 210 miles in seven successive marches (an average of 30 miles a day), making the last march of 40 miles, all these with dogs not driven by Eskimo drivers.

"On more than one occasion in the fall of 1900 Peary's parties went from Lake Hazen to Fort Conger, both by the Bellows route and by the Black Vale route, distances either way of 50 miles overland, in one march. This after the sun had set for the winter.

"In February, 1899, before the sun returned, Peary (with both feet frozen six weeks before) sledged from Conger to Cape D'Urville, a distance of over 200 miles, in eleven marches, in an average temperature of 53° below zero, an average of about 20 miles. In March of 1902 he went from Cape Sabine to Fort Conger, a distance of 250 miles to 300 miles, as travelled, in twelve marches, an average of 21 to 25 miles, and later covered the same distance again in eleven marches, an average of 22 to 27 miles.

"In the history of polar exploration no one has had so much and such long-continued training in ice work as Peary; his speed is the result of long years of practice, resulting in great physical endurance and skill in the use of the sledge."

#### NOTES.

ELSEWHERE in this issue Prof. Bryan deals with some aspects of the remarkable *aéroplane* flight from London to Manchester accomplished by M. Paulhan on April 27–28, thereby winning the prize of 10,000*l.* offered by the *Daily Mail* to the aviator who would make this cross-country flight within twenty-four hours. M. Paulhan left London (Hendon) at 5.22 p.m. on April 27, and descended at Lichfield—117 miles distant—at 8.10 p.m., that is, 2h. 48m. later. He left Lichfield at 4.10 a.m. on the following day, and arrived at Manchester at 5.30 a.m., the distance being 69 miles. The total distance covered with the one stop was thus 186 miles. The prize was presented to M. Paulhan at a luncheon given in his honour on Saturday, and a 100-guinea cup was handed to Mr. Grahame-White in recognition of his plucky endeavour to secure the prize for England. At the banquet, the editor of the *Daily Mail*, in expressing regret for the absence of Lord Northcliffe on account of illness, reminded the assembly that it was owing to Lord Northcliffe's personal initiative that the substantial prize won by M. Paulhan was offered for competition. He stated also that, in view of the great importance of aviation to Great Britain, the *Daily Mail* will

immediately offer a further sum of 10,000*l.* for a flight of which the conditions will be announced shortly. Mr. Grahame-White, in acknowledging the toast of his health, said that it is his intention to expend the proceeds of the Royal Aéro Club's testimonial to himself upon the necessary organisation for an *aéroplane* flight from London to Paris "which I have made up my mind to attempt with the least possible delay." Though we have no sympathy with mere record-breaking, such flights as those accomplished across country by M. Paulhan and Mr. Grahame-White, and others now contemplated, provide practical demonstrations of *aéroplane* performances which will make the British people realise more than anything else the possibilities of *aërial* navigation. At present the man in the machine counts for everything; and an *aéroplane* which Prof. Bryan considers to be laterally unstable is so skilfully managed that it rises superior to its imperfections. It is indeed a sign of progress in the management of *aéroplanes* that, without a trial flight, and about nine hours after his machine arrived at Hendon, M. Paulhan should make a flight of 117 miles across country without a stop. No doubt much yet remains to be done before the best type of construction of *aéroplanes* can be determined; nevertheless, the flight last week will go down in history as a notable achievement.

It is announced that Mr. P. H. Cowell, F.R.S., chief assistant in the Royal Observatory, Greenwich, has been appointed superintendent of the Nautical Almanac, in succession to Dr. A. M. W. Downing, who has retired.

WE have received with regret the announcement of the death, on April 28, of Prof. E. J. L. M. van Beneden, professor of zoology and comparative anatomy in the University of Liège, at sixty-four years of age.

A CONVERSAZIONE, with short lectures and lantern demonstrations, will be held by the Entomological Society in the rooms of the Civil Service Commission, Burlington Gardens, W., on the evening of Friday, May 27. Fellows of the society and others interested requiring further particulars are invited to address all inquiries to the honorary secretary, conversazione committee, 11 Chandos Street, Cavendish Square, W.

THE valuable collections of native African art made by Mr. E. Torday in the southern Belgian Congo are now being classified and arranged by the authorities of the British Museum. The most remarkable specimens in the collection are the wooden portrait statues of past rulers, which throw a new light on savage art in Africa. Next in importance are a splendid carved throne of the paramount chiefs, wooden caskets and cups, and specimens of remarkable textiles resembling velvet, made from the fibre of the upper skin of the palm leaf (*raphia*). This collection was happily made before the almost complete disappearance of native art work due to the importation of cheap European productions.

THE council of the Institution of Civil Engineers has made the following awards for papers during the session 1909–10:—a Telford gold medal to Mr. C. M. Jacobs (New York); a Watt gold medal to Mr. J. D. Watson (Birmingham); a George Stephenson gold medal to Mr. D. A. Matheson (Glasgow); Telford premiums to Messrs. F. C. Buscarlet (Sunderland), A. Hunter (Glasgow), I. C. Barling (Tynemouth), J. Dalziel and J. Sayers (Derby), and J. Shaw (Birkenhead); and the Manby premium to the late Mr. C. W. Hodson (London). The thanks of the council have been conveyed to their colleague, Dr. C. A. Harrison, for the paper contributed by him.

At the annual general meeting of the Institution of Civil Engineers, held on Tuesday, April 26, the result of the ballot for the election of officers was declared as follows:—*President*, Mr. Alexander Siemens; *vice-presidents*, Dr. W. C. Unwin, Mr. R. Elliott-Cooper, Mr. A. G. Lyster, and Mr. C. A. Brereton; *others members of council*, Mr. J. A. F. Aspinall (Liverpool), Mr. B. Hall Blyth (Edinburgh), Mr. J. A. Brodie (Liverpool), Mr. W. B. Bryan, Colonel R. E. B. Crompton, C.B., Mr. Wm. Davidson (Australasia), Mr. E. B. Ellington, Mr. Maurice Fitzmaurice, C.M.G., Mr. J. P. Griffith (Ireland), Sir Robert A. Hadfield (Sheffield), Dr. C. A. Harrison (Newcastle-on-Tyne), Mr. W. Hunter, Mr. G. R. Jebb (Birmingham), Mr. H. E. Jones, Sir Wm. Thomas Lewis, Bart., K.C.V.O. (Aberdare), Mr. H. D. Lumsden (Canada), Sir Thomas Matthews, Hon. C. A. Parsons, C.B. (Wylam-on-Tyne), Mr. A. Ross, Mr. J. W. Shores, C.M.G. (South Africa), Mr. F. J. E. Spring, C.I.E. (India), Mr. J. Strain (Glasgow), Sir Frederick R. Upcott, K.C.V.O., C.S.I., Sir Philip Watts, K.C.B., Mr. W. B. Worthington (Derby), and Mr. A. F. Yarrow (Glasgow).

SCIENTIFIC work in America will benefit largely by the will of the late Prof. Alexander Agassiz. The American Academy of Arts and Sciences receives 10,000*l.*, and the National Academy of Sciences an equal sum. A bequest of 5000*l.* goes to the City of Newport, Rhode Island, for the support of the Coles Laboratory and for use in the maintenance of manual training in the city schools. The principal beneficiary is Harvard University. Prof. Agassiz has left to that institution a valuable collection of books and instruments, as well as a legacy of 20,000*l.* for the general uses of its Museum of Comparative Zoology. Another sum of 20,000*l.* is left to the president and fellows of Harvard for the publication of memoirs of Prof. Agassiz's own expeditions. In addition, a bequest of 2400*l.*, which is to provide a life income to two servants, is to revert to Harvard on the death of these servants and their wives, and the bulk of the estate, now to be divided among the three sons of the deceased, is also to become the property of the University should the family become extinct.

DR. C. B. PLOWRIGHT, whose death was announced in last week's *NATURE*, belonged to the school of mycologists founded by the Rev. M. J. Berkeley, one of the pioneers of modern mycology and the founder of plant pathology. Of this school only three members now remain, one of whom is the veteran Dr. M. C. Cooke. Among the members that assembled annually for the fungus foray, held under the auspices of the celebrated Woolhope Club, Dr. Plowright was always noted for his advanced ideas and his endeavours to elevate mycology from the old Friesian rut in which at the time it was firmly imbedded. His espousal of the heterœcismal theory of the rusts was the cause of much good-natured banter; nevertheless, Dr. Plowright commenced experiments and infections, which were continued for many years, and resulted in the production of the classic work entitled "A Monograph of the British Uredineæ and Ustilagineæ." A second publication of importance was "A Monograph of the British Hypomyces." In addition, more than one hundred papers bearing on systematic mycology and plant pathology have appeared under his name in various publications. He was a constant visitor to the various fungus forays for many years, and was for some time president of the British Mycological Society. His geniality and readiness to remove difficulties from amateur mycologists will doubtless be remembered by many, who will sincerely regret his removal from amongst them.

THE eleventh session of the International Geological Congress will be held in Stockholm on August 18–25, and the executive committee has prepared a very attractive programme both of meetings and excursions. The special problems of which discussion is invited are the classification of the pre-Cambrian system, post-Glacial climatic changes, the iron ore supplies of the world, the geology of the Polar regions, and the sudden appearance of the Cambrian fauna. The excursions are divided into three groups, those before, during, and after the congress. The most extensive of the preliminary excursions will be one to Spitsbergen under the conduct of Baron de Geer; it will last three weeks, and will be devoted to examination of the very varied glacial and stratigraphical geology of Ice Fiord. The cost of the excursion is 50*l.* Most of the other preliminary excursions are in northern Sweden, and include visits to the great overthrust area of Jämtland under the direction of Prof. Högbom, to the iron ore deposits of Lapland, to Lake Tornea to examine its overthrusting and Pleistocene geology, and to the peat deposits of Närke. There will be short excursions during the congress to localities easily accessible from Stockholm. Subsequently there will be excursions of from three to fifteen days to the chief localities of geological interest in southern Sweden, including the Archæan rocks of the south-western coast, the island of Gotland and other Silurian localities, the iron mines of middle Sweden, and the chief Mesozoic localities of Scania. The second session of the Agro-geological Conference will be held in Stockholm simultaneously, and though the two congresses are independent, geologists are invited to join both. In preparation for the discussion on the iron ore resources of the world, an elaborate collection of reports on the iron ore supplies of most countries has been collected from the geological surveys and mining geologists. It has been edited by the general secretary to the congress, Dr. Gunnar Andersson, and is being issued at a price of 3*l.* It consists of two quarto volumes of 1100 pages, with an atlas of forty-two maps and numerous plates. The work has not yet been issued, but from the list of contributions it is obviously a most valuable and authoritative statement as to the available supplies and distribution of iron ore.

THE weather was fairly normal over the British Islands during April, but the conditions were generally far less settled in the northern and western districts than elsewhere. Rain fell with considerable frequency, and at times the measurements were large, especially in those places where thunderstorms occurred. At Greenwich rain fell on seventeen days, yielding a total of 2.65 inches, which is 1.08 inches more than the average of the past sixty-five years; of this amount 1.50 inches fell on April 16, when a sharp thunderstorm was experienced. The mean temperature at Greenwich was 47.5°, which is 0.6° below the average, and there were only seven days with a temperature of 60° or above. Frost occurred in the screen on two nights, but radiation frosts occurred on sixteen nights, the exposed thermometer registering 15.9° on April 3. The sun was shining for 130 hours, which is seventeen hours less than the normal, and there were three days absolutely without sunshine. There were only three days during the month with the temperature in the sun's rays above 120°. In April last year the duration of bright sunshine was 250 hours, and there were twelve days with the solar radiation temperature above 120°, whilst the mean temperature was 49.6°, and the aggregate rainfall 1.64 inches.

IN vol. xxiv. of the *Queensland Geographical Journal* Mr. R. H. Mathews describes certain sacred stones used in burial and other rites by the aborigines of Australia.

One variety, known as Kopai balls, are made of burnt gypsum reduced to powder and moulded into a kind of concrete with ashes and sand. These are placed on the grave, and the spirit is supposed to come out and lick them, becoming in this way conciliated and friendly to the survivors. Another type of stone used in their secret rites is ground down into a blunt point at one end, and marks are cut on the surface with a sharp stone, shell, or piece of bone. The object of these markings is obscure, but they certainly convey some religious or symbolical meaning.

THE Peabody Museum, Harvard University, continues in vol. iv., part iii., of its Proceedings for the current year the studies of the Maya Codices, of which two instalments have already appeared, with an attempt by Drs. Tozzer and Allen to identify the conventionalised animal forms which appear in these remarkable documents. A detailed examination shows that only a small part of the animal life of the country occupied by the Maya-speaking peoples is represented, and while some drawings are fairly accurate, there is much difficulty in identifying other species which the artists intended to represent. Only those forms of animal life are depicted which possessed a mythological significance or were used as offerings to the numerous deities of the Pantheon. The whole scheme is thus purely religious, and the reproduction of this large series of animal figures will throw much light on the obscure religious system of this remarkable race.

MESSRS. DULAU AND CO. have issued in the series of "Eugenics Laboratory Memoirs" a memoir, by Mr. David Heron, Galton research fellow, on the influence of defective physique and unfavourable home environment on the intelligence of school children. The memoir is based on a limited survey of children in schools under the London County Council, carried on under the direction of the medical officer of the Education Committee, and the characters noted include the sex, age, height, weight, and condition of the teeth of the child, and, for certain schools, the state of nutrition, the condition of the clothing, the degree of cleanliness, the power of hearing, the condition of the cervical glands and of the tonsils, and adenoids. The methods used by Mr. Heron are in several respects novel and noteworthy, and the data based on the measured characters are of interest; but the memoir should serve its most useful purpose in indicating the absolute necessity for clear definition when qualitative characters are to be noted; the classification of the data in the present survey seems in several cases, owing to variations in the personal equation of the observers, to have been so unsatisfactory that little confidence can be placed in the results. So far as they go, these indicate but very slight correlation between intelligence and the other characters observed; but this result is in conflict with that given by the investigations of Dr. Francis Warner in 1888-91 and 1892-4, to which the author does not refer. Dr. Warner's surveys show a high correlation between dullness and malnutrition, and between dullness and development defects, and these conclusions seem the more probable.

ACCORDING to the report for 1909, the Rugby School Natural History Society continues to maintain its record for good work, some of the papers being of a high character, while the illustrations of foreign Lepidoptera are beyond praise. Whether the system of annually making trips for the purpose of obtaining large series of the local Lepidoptera, illustrative of variation, and including as many varieties as can be obtained, is altogether desirable, we will leave our readers to decide for themselves.

"RECORDS OF THE WESTERN AUSTRALIAN MUSEUM AND ART GALLERY" is the title of a new scientific journal started by the director of the museum at Perth, Western Australia. The first number is mainly devoted to an account of the so-called Mammoth Cave (a decidedly bad name for Australia), on the Margaret River, and its contained mammalian remains. Some of the latter are described by Mr. Glauert, and referred in part to existing and in part to extinct species of marsupials and monotremes.

WE have received copies of the two volumes of the *Actes de la Société Helvétique des Sciences Naturelles* for the ninety-second session, 1909. Among the contents of the first volume is a summary of Dr. Fritz Sarasin's "Geschichte der Tierwelt von Ceylon," the full text of which we have received for review in another and later serial. In another article Dr. M. Bikli gives an illustrated account of the physiography and plant-life of Greenland, a country the name of which the author believes to be derived from the contrast between the barren coastline and the green carpet frequently clothing the slopes of the more inland fjords. A special feature of the country is, indeed, the abundant dwarf vegetation clothing almost all the elevated ground except the mountains, this being illustrated by a photograph taken a short distance inland on Disco Island, while other photographs show how this plant-growth has in the course of years covered boulders and slabs of rocks. A particularly interesting picture shows the rounded shores and islands of a typical glacier-landscape at the mouth of one of the fjords.

DISCUSSING the action of light upon the green parts of plants in *Naturwissenschaftliche Wochenschrift* (April 3). Dr. Th. Löhr directs attention to the investigations of Senn upon the changes in form and position of the chromatophores. According to this observer, the green colouring matter occurs in the shape of drops or grains, the grana, invested by a distinct protoplasmic layer and lying in the general stroma of protoplasm. Under favourable conditions of light the chromatophores are polygonal, but when subjected to strong or weak light they contract to a globular form. Reference is also made to the hypothesis advanced by Stahl that the colour of the chromatophores is regulated so as to avoid absorption of heat rays and undue transpiration. The latter part of the article deals with the conclusions of Wiesner regarding the light requirements of plants, and Haberlandt's explanation of light perceptivity.

THE second "Masters lecture" on the production of horticultural varieties was delivered by Prof. H. de Vries before the Royal Horticultural Society, and occupies the first place in the Journal (vol. xxxv., part iii.). He recognises varieties of two types, those which are constant at their first appearance and others which are continually sporting; the latter can only be fixed by "working up." As an example of his method, he relates his experience in trying to obtain the wholly peloric variety of *Linaria vulgaris*. For eight years he cultivated the ordinary species, treating it in various ways and excluding always the possibility of crossing with allied forms; during this period, inflorescences with occasional peloric (hemi-peloria) flowers were produced, and eventually plants producing all peloric flowers appeared in the cultures. He notes that seed was obtained from some of these wholly peloric flowers. In his book he states that the seed came only partially true, but by further cultivation and selection he reduced the "reverts" to a small percentage.

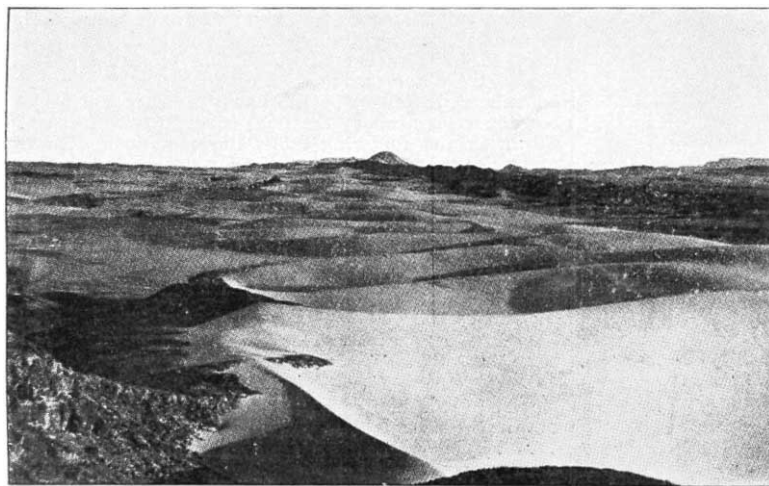
It has not been the custom to issue an annual report on insect pests in the West Indies, but a summary is pub-

lished in No. 201 of the *Agricultural News* of the more serious occurrences of pests during 1909. In only one district, a comparatively small area in Barbados, was any trouble experienced from the sugar-cane root-borer (*Diaprepes abbreviatus*); the larger moth-borer (*Castnia ticus*) was, however, reported from British Guiana. The cotton-worm (*Aletia argillacea*), which was very abundant during the season 1908-9, has given very little trouble during the present season, nor have any other cotton pests been reported. Scale insects continue to attack limes, but no severe outbreak has occurred during the year; parasitic fungi are known to occur on these insects, and probably aid in keeping them in check. The scarabee, or jacob, of the sweet potato (*Cryptorhynchus batatae*) has proved serious in Barbados, and cannot yet be controlled; new methods of treatment are therefore being devised. Another insect about which further information is required is a small moth, the larva of which lives in the heads of ripening sorghum, and causes much damage.

THE sand-dunes of the Libyan Desert have been studied by Mr. H. J. Ll. Beadnell during a residence of three

and proves to be 15 or 16 metres a year. The finest material from the northern sandstones is probably recovered in the district of alluvial loams south of Kharga oasis.

IN connection with Prof. Silvanus P. Thompson's recent experiments on the physiological effects of an alternating magnetic field on the human body, Mr. A. A. C. Swinton, in a letter which appears in the *Electrician* for April 22, directs attention to several simpler methods of producing the same effects which have been known and used by medical men for some years. If the current from an ordinary magneto machine be passed from the hand to a wet sponge held on the temple behind the eye, a faint flicker will be seen, which increases in frequency as the speed of the machine is increased. If the current is sent through the head in other directions a metallic taste is produced in the mouth. By making the arms and body into the secondary of a coil of many turns carrying a high-frequency current, a small incandescent lamp the terminals of which are in contact with the two hands may be made to light up.



A Belt of Dunes in Kharga Oasis, looking south or downstream. From the *Geographical Journal*.

years in Kharga oasis, some 300 miles south of Cairo (*Geographical Journal*, vol. xxxv., April, p. 379). Even where superposed on irregular sands, the dunes show a remarkable linear grouping from north to south. The dunes of Abu Moharik thus start west of Cairo, and thence form a belt 6 or 7 kilometres wide and 650 kilometres in length. The author traces the sand to the rocks of post-Middle-Eocene age that border the Mediterranean, and not to the Nubian Sandstone of the southern region. Between these two regions lies the tableland of Eocene limestone, grains from which may supply more than 7 per cent. of calcium carbonate to the dunes piled up in the oasis of Kharga. The growth and movement of crescentic dunes or barchans have been especially observed. By saturating the concave side of a barchan with water, it became possible to cut a section in it, showing a bedded structure formed by sand carried over from the windward side. Mr. Beadnell urges that this justifies the older view of the formation of the steep convex face, as against that of excavation by scour suggested by Dr. Cornish. Dr. Cornish, however, in the discussion on the paper, attributes the stratification to sliding following upon scour. Steep as the inner face seems to the eye, Mr. Beadnell shows that its slope cannot exceed  $33^\circ$ . The average rate of progression of dunes in the Libyan Desert, from north to south, is now for the first time measured over two years,

netic storms are not instantaneous over the whole earth, but in general travel to the east, occasionally to the west, with a speed of about 7000 miles per minute, which may be reduced considerably in the case of some of the larger and more complex disturbances.

MR. ARTHUR MORLEY contributes a useful article on the strength of materials under combined stresses in *Engineering* for April 29. Undoubtedly recent experiments on combined stresses have furnished interesting information on the behaviour of materials under static loads, but some hasty applications of this information are very unfortunate. A static determination of the tenacity of a material is easily made, and may serve as a useful index of quality, but it is well known that a simple stress of about one-quarter to one-third of this amount will be sufficient to cause fracture if frequently reversed in direction. What the conditions of failure may be under combined stresses which fluctuate are, in the absence of experimental evidence, at present unknown; but a safe load may as well be proportional to the static tenacity as to the static shear stress at elastic failure, and it is much too soon to speak of the entire revision of formulæ and practice affected by accepted theories, or to hope that controversy concerning the design of crank-shafts is ended. Rather it would be correct to say that only the fringe of the question has been touched.

A PAPER on the effects of sewage and sewage gases on Portland cement concrete was read at the Concrete Institute on April 21 by Mr. Sidney H. Chambers, surveyor to the Hampton Urban District Council, and appears in the *Builder* for April 30. Mr. Chambers has had special opportunities for studying this problem during the past five or six years, and has come to the conclusion that the gases in solution in sewage, and those expelled from it, arising from its decomposition, do act injuriously upon Portland cement concrete, even when the concrete is constituted of sound and good materials. However, little danger from erosion need be feared provided one or other of the following factors be absent:—(a) a high degree of putrescence of the sewage; (b) a moistened surface, which held or absorbed the putrid gases; (c) the presence of a free air supply. In one chamber under the author's observation, as the level of the liquid fell it left the concrete wetted with a liquid containing sulphuretted hydrogen in solution. This wet surface was then exposed to the action of the air supply, which oxidised the sulphuretted hydrogen with the production of sulphur and sulphuric acid, and led to the decomposition of the concrete, the lime being converted finally into sulphate of lime. The exact nature of the intermediate compounds cannot be stated, but it is probable that the active agent is sulphurous acid, as cement is insoluble in sulphuric acid. The decomposed concrete was washed away at the next rising of the liquid, thus exposing a fresh surface to the action. The continuation of this cycle led to the formation of grooves at the varying liquid-level.

MESSRS. SWAN SONNENSCHN AND Co. will publish in the course of the next fortnight a volume to be entitled "The Signs and Symbols of Primordial Man," in which Dr. Albert Churchward explains the evolution of religious doctrines from the eschatology of the ancient Egyptians.

A CLEARANCE catalogue of a miscellaneous collection of books, including works on America, Africa, &c., various domestic animals, and general natural history and literature, has just been issued by Messrs. John Wheldon and Co., Great Queen Street, Kingsway, W.C. The same firm announces the publication of a work, to be issued in twenty-five quarterly parts, on "South American Ornithology: a Manual of the Birds of Continental South America, from the Isthmus of Panama to the Straits of Magellan," edited by Mr. H. Kirke Swann.

MM. GAUTHIER-VILLARS, of Paris, have issued in their "Savants du Jour" series a monograph, by M. Ernest Lebon, dealing with Prof. Gaston Darboux and his work. The book opens with a biography of the distinguished mathematician and a list of the many distinctions conferred upon him. The remaining six sections are concerned with Prof. Darboux's contributions to mathematical science, and contain several appreciations of them by French men of science. It may be noted that Prof. Darboux's writings number 419. The volume, which costs 7 francs, contains an excellent portrait of Prof. Darboux.

WE have received from Messrs. Newton and Co. an advance proof of the first portion of their new catalogue concerned with "Apps-Newton Induction Coils, X-Ray, High-frequency, Static, and other Electrical Apparatus for Medical Work." An introductory section, which precedes the price-list, provides the general medical practitioner with the information needed to enable a beginning to be made in the use of electrical methods in his practice. The catalogue serves, incidentally, to show with what powerful aids recent developments in electrical science have provided present-day physicians and surgeons. The contents of the

list, arranged as they are so as to make reference easy, will prove of great interest, not only to medical men, but also to electricians.

MESSRS. KEGAN PAUL, TRENCH, TRÜBNER AND Co., LTD., have published an eighteenth edition of the late Mr. Winwood Reade's "The Martyrdom of Man." Reade, who died in 1875, in his thirty-sixth year, said of this book of his that in commencing it he intended "to prove that Negroland or Inner Africa is not cut off from the main-stream of events as writers of philosophical history have always maintained, but that it is connected, by means of Islam, with the lands of the East, and also that it has, by means of the slave trade, powerfully influenced the moral history of Europe, and the political history of the United States. But I was gradually led from the history of Africa into writing the history of the world."

### OUR ASTRONOMICAL COLUMN.

HALLEY'S COMET.—Attempts to observe Halley's comet, with binoculars or naked eye, during the past week have shown that it is by no means an easy object, especially for town-dwellers. By getting out of the town on its eastern side, thereby leaving the inevitable pall of smoky haze behind the observer, the chance of seeing the comet would be enhanced; otherwise the dawn becomes too bright ere the comet rises above the haze bordering the horizon. As shown in the following table, the conditions with regard to sunrise are now slightly more favourable, but the interval between comet-rise and sunrise again begins to decrease after May 6, and, on this account, observations will become increasingly difficult:—

		Comet rises		Sun rises	
		a.m.		a.m.	
May	6	...	2.20	...	4.26
"	9	...	2.19	...	4.21
"	12	...	2.18	...	4.16
"	15	...	2.37	...	4.11
"	18	...	3.30	...	4.7

Despite the unfavourable conditions, several observers have reported seeing the comet with binoculars. Thus Mr. W. B. Tripp writes that he saw it plainly, from Isleworth, with a binocular field-glass, from 3.0 to 3.30 a.m. on May 3; to the naked eye it was a very faint object south of  $\gamma$  Pegasi. In addition to a bright nucleus, there appeared to be an appreciable, though short, tail, of which Mr. Tripp sends a rough sketch. Other naked-eye observations have also been recorded. Sir Robert Ball, telegraphing to the *Times* on May 3, said:—"Halley's comet was observed at Cambridge at 3 this morning. The stellar nucleus was between the second and third magnitude, and the tail was 20 minutes long."

The rapid approach to the earth should make observations easier, the distances, in millions of miles, for the next few days being as follows:—May 6, 56; May 10, 41; May 14, 27; May 18, 16; May 20, 14.3. After May 20 the comet will recede from us at about the same rate as it is now approaching us, attaining a distance of about 42 million miles on May 30.

Some interesting articles dealing with comets in general, and Halley's in particular, appear in No. 1926 of *La Nature* (April 23), which is wholly devoted to the subject. M. Jean Mascart discourses on the historical importance of Halley's comet; M. Rudaux discusses the nature of comets and their orbits, referring to many famous examples; and M. Touchet contributes a description of comet 1910a. All the articles are profusely illustrated with interesting diagrams and photographs.

Another interesting article, in which Dr. H. N. Russell discusses the conditions of the present apparition, is published in the *Scientific American* for April 16. He points out that the present apparition is a favourable one, and discusses the phenomena which may be observed. One of the illustrations is a reproduction of Prof. Frost's objective-prism spectrum of January 14, in which the cyanogen band is an outstanding feature. Dr. Russell makes some